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10/717,625	11/21/2003	Kei Matsuoka	245719US2RD	8609
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
RHEE, JANE J				
ART UNIT		PAPER NUMBER		
1795				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/717,625

Applicant(s)

MATSUOKA ET AL.

Examiner

JANE RHEE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,7-13,15-21 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,7-13,15-21,23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Rejection Withdrawn

1. The 35 U.S.C. 102(b) rejection of claims 1,5,7-9,11,15-17,23 anticipated by Beshty et al. has been withdrawn due to applicant's amendment filed on 2/28/08.
2. The 35 U.S.C. 103(a) rejection of claims 12-13,20-21 unpatentable over Beshty et al. in view of Von Andrian has been withdrawn due to applicant's amendment filed on 2/28/08.
3. The 35 U.S.C. 103(a) rejection of claims 10 and 18 unpatentable over Beshty et al. in view of Tsuki et al. has been withdrawn due to applicant's amendment filed on 2/28/08.

New Rejection

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,5,7 are rejected under 35 U.S.C. 102(b) as being anticipated by Baldauf et al. (20020119352).

As to claim 1, Baldauf et al. discloses a fuel cell system comprising a direct organic liquid feed fuel cell having an anode, a cathode, and an electrolyte membrane

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put therebetween (figure 1 number 1), a fuel supply unit supplying liquid fuel to the anode (figure 1 number 8) an air supply unit supplying air to the cathode (figure 1), and a heat exchanger (figure 1 number 2) exchanging heat between the liquid fuel supplied by the fuel supply unit to the anode (figure 1 number 5) and an exhaust exhausted from the liquid fuel cell wherein the exhaust is exhausted from ten anode or both cathode and anode (figure 1 number 12). As to claim 5, Baldauf et al. discloses that the fuel supply unit further comprises a mixing container mixing the fuel and the exhaust so as to form a mixture in advance (figure 1 number 5). As to claim 7, Baldauf et al. discloses that liquid fuel cell is a direct methanol fuel cell (paragraph 0002).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 8-9,15-17,23 are rejected under 35 U.S.C. 102(e) as being anticipated by Von Andrian et al. (6977118).

As to claim 8, Von Andrian et al. discloses a fuel cell system comprising a direct organic liquid feed fuel cell having an anode, a cathode and an electrolyte membrane put therebetween (figure 1), a fuel supply unit including a mixing container mixing liquid fuel (figure 1) and an exhaust exhausted from the liquid fuel cell so as to form a liquid mixture (figure 1), the liquid mixture being supplied to the anode (figure 1), an air supply unit supplying air to the cathode (figure 1), a heat exchanger connected to the mixing container so as to exchange heat between the ambient air and the liquid mixture in the

mixing container (figure 1, heat exchanger WT3). As to claim 9, Von Andrian et al. discloses that the mixing container is configured so that the exhaust passes through the mixture housed in the mixing container thereby gas fractions in the exhaust is separated (figure 1). As to claim 15, Von Andrian et al. discloses wherein the liquid fuel cell is a direct methanol fuel cell (figure 1 DMFC).

As to claim 16, Von Andrian et al. discloses a fuel cell system comprising a direct organic liquid feed fuel cell having an anode, a cathode and an electrolyte membrane put therebetween, a fuel supply unit (figure 1) including a mixing container mixing liquid fuel and an exhaust exhausted from the liquid fuel cell so as to form liquid mixture (figure 1), the liquid mixture being supplied to the anode (figure 1), an air supply unit supplying air to the cathode (figure 1), a heat exchanger exposed to an ambient air (figure 1, heat exchanger WT3) and a circulation unit circulating the liquid mixture between the mixing container and the heat exchanger so as to exchange heat between the ambient air and the liquid mixture in the mixing container (figure 1). As to claim 17, Von Andrian et al. discloses that the mixing container is configured so that the exhaust passes through the mixture housed in the mixing container thereby gas fractions in the exhaust is separated (figure 1). As to claim 23, Von Andrian et al. discloses that fuel cell is a direct methanol fuel cell (figure 1 DMFC).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11-13,19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Von Andrian et al. in view of Baldauf et al. (20020119352).

Von Andrian et al. discloses the fuel cell system described above. Von Andrian et al. fail to disclose a second heat exchanger exchanging heat between the liquid mixture supplied by the fuel supply unit and an exhaust exhausted from the anode or cathode or both anode and cathode.

Baldauf et al. teaches a second heat exchanger exchanging heat between the liquid mixture supplied by the fuel supply unit and an exhaust exhausted from the anode or cathode or both anode and cathode for the purpose of providing an evaporator to evaporate the fuel mixture before entering the fuel stack (paragraph 0072).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Von Andrian et al. with a second heat exchanger exchanging heat between the liquid mixture supplied by the fuel supply unit and an exhaust exhausted from the anode or cathode or both anode and cathode in order to provide an evaporator to evaporate the fuel mixture before entering the fuel stack (paragraph 0072) as taught by Baldauf et al.

7. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Von Andrian in view of Tsuki et al. (4629664).

Von Andrian discloses the fuel cell described above. Von Andrian fail to disclose a second mixing container communicated with the mixing container wherein the liquid mixture is supplied from the second mixing container to the anode.

Tsuki et al. teaches a second mixing container communicated with the mixing container wherein the liquid mixture is supplied from the second mixing container to the anode for the purpose of providing good fuel cell performance (col. 8 lines 31).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide Von Andrian with a second mixing container communicated with the mixing container wherein the liquid mixture is supplied from the second mixing container to the anode in order to provide good fuel cell performance (col. 8 lines 31).

Response to Arguments

8. Applicant's arguments with respect to claims 1,5,7-13,15-21,23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANE RHEE whose telephone number is (571)272-1499. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jane Rhee/
Primary Examiner, Art Unit 1795
4/22/08